



002010-854.ST25

SEQUENCE LISTING

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<120> Composition for and Treatment of Demyelinating Diseases
and Paralysis By Administration of Remyelating Agents

<130> 002010-854

<140> US 10/763,539

<141> 2004-01-26

<160> 71

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 360

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)...(360)

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gtc aag ttg ttc tgc aca gct tct ggc ttc aac att aaa gac acc tat	96
Val Lys Leu Phe Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr Tyr	
20 25 30	
atg cac tgg gtg aag cag agg cct caa cag ggc ctg gag tgg att gga	144
Met His Trp Val Lys Gln Arg Pro Gln Gln Gly Leu Glu Trp Ile Gly	
35 40 45	
agg att gat cct gcg agt ggc gat act aaa tat gac ccg aag ttc cag	192
Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe Gln	
50 55 60	
gtc aag gcc act att aca gcg gac acg tcc tcc aac aca gcc tgg ctg	240
Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Trp Leu	
65 70 75 80	
cag ctc agc agc ctg aca tct gag gac act gcc gtc tac tac tgt gca	288
Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala	
85 90 95	

gac gga atg tgg gta tca acg gga tat gct ctg gac ttc tgg ggc caa 336
 Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly Gln
 100 105 110

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 Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 2
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 <213> Homo sapiens

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 Val Lys Leu Phe Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr Tyr
 20 25 30
 Met His Trp Val Lys Gln Arg Pro Gln Gln Gly Leu Glu Trp Ile Gly
 35 40 45
 Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe Gln
 50 55 60
 Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Trp Leu
 65 70 75 80
 Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95
 Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly Gln
 100 105 110
 Gly Thr Thr Val Thr Val Ser Ser
 115 120

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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(318)

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 1 5 10 15
 gac agg gtt acc ata acc tgc aag gcc agt cag agt gtg act aat gat 96
 Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val Thr Asn Asp
 20 25 30
 gta gct tgg tac caa cag aag cca ggg cag tct cct aaa ctg ctg ata 144
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
 35 40 45
 tat tat gca tcc aat cgc tac act gga gtc cct gat cgc ttc act ggc 192
 Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly
 50 55 60

agt gga tat ggg acg gat ttc act ttc acc atc agc act gtg cag gct 240
 Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Thr Val Gln Ala
 65 70 75 80

gaa gac ctg gca gtt tat ttc tgt cag cag gat tat agc tct ccg tac 288
 Glu Asp Leu Ala Val Tyr Phe Cys Gln Gln Asp Tyr Ser Ser Pro Tyr
 85 90 95

acg ttc gga ggg ggg acc aag ctg gag atc 318
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
 100 105

<210> 4
 <211> 106
 <212> PRT
 <213> Homo sapiens

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 20 25 30
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
 35 40 45
 Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly
 50 55 60
 Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Thr Val Gln Ala
 65 70 75 80
 Glu Asp Leu Ala Val Tyr Phe Cys Gln Gln Asp Tyr Ser Ser Pro Tyr
 85 90 95
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
 100 105

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 <213> Homo sapiens

<220>
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 <222> (1)...(429)

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 gcc cac tcc cag gtc caa ctg cag gag tcc ggt gct gaa gtt gtt aaa 96
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Ala Glu Val Val Lys
 20 25 30
 ccg ggt tcc tcc gtt aaa ctg tcc tgc aaa gct tcc ggt ttc aac atc 144
 Pro Gly Ser Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile
 35 40 45
 aaa gac acc tac atg cac tgg gtt aaa cag cgt ccg ggt cag ggt ctg 192
 Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu

50	55	60	
gaa tgg atc ggt cgt atc gac ccg gct tcc ggt gac acc aaa tac gac			240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp			
65	70	75	80
ccg aaa ttc cag gtt aaa gct acc atc acc gct gac gaa tcc acc tcc			288
Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr Ser			
	85	90	95
acc gct tac ctg gaa ctg tcc tcc ctg cgt tcc gaa gac acc gct gtt			336
Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val			
	100	105	110
tac tac tgc gct gac ggt atg tgg gtt tcc acc ggt tac gct ctg gac			384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp			
	115	120	125
ttc tgg ggt cag ggt acc acg gtc acc gtc tcc tca ggt gag tcc			429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser			
	130	135	140

<210> 6
 <211> 143
 <212> PRT
 <213> Homo sapiens

<400> 6
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 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Ala Glu Val Val Lys
 20 25 30
 Pro Gly Ser Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile
 35 40 45
 Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu
 50 55 60
 Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65 70 75 80
 Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr Ser
 85 90 95
 Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125
 Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 130 135 140

<210> 7
 <211> 383
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(375)

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 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
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gtt cac tcc atc gtt atg acc cag tcc ccg gac tcc ctg gct gtt tcc 96
 Val His Ser Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser
 20 25 30

ctg ggt gaa cgt gtt acc atc aac tgc aaa gct tcc cag tcc gtt acc 144
 Leu Gly Glu Arg Val Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Thr
 35 40 45

aac gac gtt gct tgg tac cag cag aaa ccg ggt cag tcc ccg aaa ctg 192
 Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu
 50 55 60

ctg atc tac tac gct tcc aac cgt tac acc ggt gtt ccg gac cgt ttc 240
 Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe
 65 70 75 80

tcc ggt tcc ggt tac ggt acc gac ttc acc ttc acc atc tcc tcc gtt 288
 Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val
 85 90 95

cag gct gaa gac gtt gct gtt tac tac tgc cag cag gac tac tcc tcc 336
 Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Asp Tyr Ser Ser
 100 105 110

ccg tac acc ttc ggt ggt ggt acc aaa ctg gag atc taa ggatcctc 383
 Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile *
 115 120

<210> 8

<211> 124

<212> PRT

<213> Homo sapiens

<400> 8

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
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 Val His Ser Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser
 20 25 30
 Leu Gly Glu Arg Val Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Thr
 35 40 45
 Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu
 50 55 60
 Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe
 65 70 75 80
 Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val
 85 90 95
 Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Asp Tyr Ser Ser
 100 105 110
 Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
 115 120

<210> 9

<211> 429
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(429)

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  1          5          10          15

gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga 96
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
      20          25          30

cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att 144
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
      35          40          45

aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt 192
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
      50          55          60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac 240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
      65          70          75          80

ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac 288
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
      85          90          95

aca gcc tgg ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc 336
Thr Ala Trp Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
      100          105          110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac 384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
      115          120          125

ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc 429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
      130          135          140

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<210> 10
 <211> 143
 <212> PRT
 <213> Homo sapiens

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<400> 10
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      20          25          30
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
      35          40          45

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Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
  50      55      60
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
  65      70      75      80
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
      85      90      95
Thr Ala Trp Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
      100      105      110
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
      115      120      125
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
      130      135      140

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<210> 11
<211> 429
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (1)...(429)

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<400> 11
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Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
  1      5      10      15

gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga 96
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
      20      25      30

cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att 144
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
      35      40      45

aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt 192
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
      50      55      60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac 240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
      65      70      75      80

ccg aag ttc cag gtc aaa gcg aca att acg gca gac acc agc agc aac 288
Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
      85      90      95

cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc 336
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
      100      105      110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac 384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
      115      120      125

ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc 429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
      130      135      140

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<210> 12
 <211> 143
 <212> PRT
 <213> Homo sapiens

<400> 12
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 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
 35 40 45
 Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
 50 55 60
 Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65 70 75 80
 Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
 85 90 95
 Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125
 Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 130 135 140

<210> 13
 <211> 372
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(372)

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 acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att aaa gac acc 96
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile Lys Asp Thr
 20 25 30
 tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt gag tgg att 144
 Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Ile
 35 40 45
 gga agg att gat cct gcg agt ggc gat act aaa tat gac ccg aag ttc 192
 Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe
 50 55 60
 cag gtc aga gtg aca atg ctg gta gac acc agc agc aac cag ttc agc 240
 Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn Gln Phe Ser
 65 70 75 80

ctg aga ctc agc agc gtg aca tct gag gac acc gcg gtc tat tat tgt 288
 Leu Arg Leu Ser Ser Val Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

gca gac gga atg tgg gta tca acg gga tat gct ctg gac ttc tgg ggc 336
 Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly
 100 105 110

caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc 372
 Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 115 120

<210> 14
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 14
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 20 25 30
 Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Ile
 35 40 45
 Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe
 50 55 60
 Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn Gln Phe Ser
 65 70 75 80
 Leu Arg Leu Ser Ser Val Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly
 100 105 110
 Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 115 120

<210> 15
 <211> 429
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(429)

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 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1 5 10 15
 gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga 96
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30
 cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att 144
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
 35 40 45

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aaa gac acc tat atg cac tgg gtg aaa cag cga cct gga cga ggt ctt 192
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Arg Gly Leu
   50                               55                               60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac 240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
   65                               70                               75                               80

ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac 288
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
                               85                               90                               95

cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc 336
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
                               100                               105                               110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac 384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
                               115                               120                               125

ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc 429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
   130                               135                               140

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<210> 16
 <211> 143
 <212> PRT
 <213> Homo sapiens

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<400> 16
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Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
  20           25           30
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
  35           40           45
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Arg Gly Leu
  50           55           60
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
  65           70           75           80
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
  85           90           95
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
  100          105          110
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
  115          120          125
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
  130          135          140

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<210> 17
 <211> 429
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS

<222> (1)...(429)

<400> 17

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atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt      48
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
  1              5              10              15

gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga      96
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
              20              25              30

cct agc cag acc ctg agc ctg acc tgc acc gcg tct ggc ttc aac att     144
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ala Ser Gly Phe Asn Ile
              35              40              45

aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt     192
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
              50              55              60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac     240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
              65              70              75

ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac     288
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
              85              90              95

cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc     336
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
              100              105              110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac     384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
              115              120              125

ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc         429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
              130              135              140

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<210> 18

<211> 143

<212> PRT

<213> Homo sapiens

<400> 18

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Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
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Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
              20              25              30
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ala Ser Gly Phe Asn Ile
              35              40              45
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
              50              55              60
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
              65              70              75
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
              85              90              95

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Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125
 Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 130 135 140

<210> 19
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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(386)

<400> 19
 atg ggt tgg tcc tgc atc atc ctg ttc ctg gtt gct acc gct acc ggt 48
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15
 gtt cac tcc gac atc cag ctg acc cag agc cca agc agc ctg agc gcc 96
 Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
 20 25 30
 agc gtg ggt gac aga gtg acc atc acc tgt aag gcc agt cag agt gtg 144
 Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
 35 40 45
 act aat gat gta gct tgg tac cag cag aag cca ggt aag gct cca aag 192
 Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
 50 55 60
 ctg ctg atc tac tat gca tcc aat cgc tac act ggt gtg cca agc aga 240
 Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
 65 70 75 80
 ttc agc ggt agc ggt agc ggt acc gac ttc acc ttc acc atc agc agc 288
 Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
 85 90 95
 ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc 336
 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
 100 105 110
 tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag 384
 Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
 115 120 125
 tg 386

<210> 20
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 20
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly

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      1           5           10           15
Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
      20           25           30
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
      35           40           45
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
      50           55           60
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
      65           70           75           80
Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
      85           90           95
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
      100          105          110
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
      115          120          125

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<210> 21
 <211> 386
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(386)

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<400> 21
atg ggt tgg tcc tgc atc atc ctg ttc ctg gtt gct acc gct acc ggt 48
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
      1           5           10           15

gtc cac tcc agc atc gtg atg acc cag agc cca agc agc ctg agc gcc 96
Val His Ser Ser Ile Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
      20           25           30

agc gtg ggt gac aga gtg acc atc acc tgt aag gcc agt cag agt gtg 144
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
      35           40           45

act aat gat gta gct tgg tac cag cag aag cca ggt aag gct cca aag 192
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
      50           55           60

ctg ctg atc tac tat gca tcc aat cgc tac act ggt gtg cca gat aga 240
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
      65           70           75           80

ttc agc ggt agc ggt tat ggt acc gac ttc acc ttc acc atc agc agc 288
Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
      85           90           95

ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc 336
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
      100          105          110

tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag 384
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
      115          120          125

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tg

386

<210> 22
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 22
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15
 Val His Ser Ser Ile Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 20 25 30
 Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
 35 40 45
 Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
 50 55 60
 Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
 65 70 75 80
 Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
 85 90 95
 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Cys Gln Gln Asp Tyr Ser
 100 105 110
 Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
 115 120 125

<210> 23
 <211> 386
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(386)

<400> 23
 atg ggt tgg tcc tgc atc atc ctg ttc ctg gtt gct acc gct acc ggt 48
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15
 gtc cac tcc gac atc cag atg acc cag agc cca agc agc ctg agc gcc 96
 Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 20 25 30
 agc gtg ggt gac aga gtg acc atc acc tgt aag gcc agt cag agt gtg 144
 Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
 35 40 45
 act aat gat gta gct tgg tac cac cag aag cca ggt aag gct cca aag 192
 Thr Asn Asp Val Ala Trp Tyr His Gln Lys Pro Gly Lys Ala Pro Lys
 50 55 60
 ctg ctg atc tac tat gca tcc aat cgc tac act ggt gtg cca gat aga 240
 Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
 65 70 75 80
 ttc agc ggt agc ggt tat ggt acc gac ttc acc ttc acc atc agc agc 288
 Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
 85 90 95

ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc 336
 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
 100 105 110

tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag 384
 Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
 115 120 125

tg 386

<210> 24
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 24
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15
 Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 20 25 30
 Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
 35 40 45
 Thr Asn Asp Val Ala Trp Tyr His Gln Lys Pro Gly Lys Ala Pro Lys
 50 55 60
 Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
 65 70 75 80
 Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
 85 90 95
 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
 100 105 110
 Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
 115 120 125

<210> 25
 <211> 37
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (20)...(37)

<400> 25 37
 cagaaagctt gccgccacc atg aga ccg tct att cag
 Met Arg Pro Ser Ile Gln
 1 5

<210> 26
 <211> 6
 <212> PRT
 <213> Homo sapiens

<400> 26
 Met Arg Pro Ser Ile Gln
 1 5

<210> 27
 <211> 35
 <212> DNA
 <213> Homo sapiens

<400> 27
 ccgaggatcc actcacgttt gatttccagc ttggt 35

<210> 28
 <211> 37
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (20)...(37)

<400> 28
 cagaaagctt gccgccacc atg aaa tgc agc tgg gtc 37
 Met Lys Cys Ser Trp Val
 1 5

<210> 29
 <211> 6
 <212> PRT
 <213> Homo sapiens

<400> 29
 Met Lys Cys Ser Trp Val
 1 5

<210> 30
 <211> 33
 <212> DNA
 <213> Homo sapiens

<400> 30
 ccgaggatcc actcacctga ggagacggtg act 33

<210> 31
 <211> 39
 <212> DNA
 <213> Homo sapiens

<400> 31
 gatggtgact ctatctccta cagatgcaga cagtgagga 39

<210> 32
 <211> 32
 <212> DNA
 <213> Homo sapiens

<400> 32
 ctgtaggaga tagagtcacc atcacttgca ag 32

<210> 33
 <211> 39

<212> DNA
 <213> Homo sapiens

 <400> 33 39
 aggagctttt ccagggtgtct gttggtacca agccatata

 <210> 34
 <211> 41
 <212> DNA
 <213> Homo sapiens

 <400> 34 41
 accaacagac acctggaaaa gtcctaggc tgctcataca t

 <210> 35
 <211> 40
 <212> DNA
 <213> Homo sapiens

 <400> 35 40
 gcaggctgct gatggtgaaa gtataatctc tcccagaccc

 <210> 36
 <211> 42
 <212> DNA
 <213> Homo sapiens

 <400> 36 42
 actttcacca tcagcagcct gcagcctgaa gatattgcaa ct

 <210> 37
 <211> 59
 <212> DNA
 <213> Homo sapiens

 <400> 37 59
 ccgaggatcc actcacgttt gatttccacc ttggtgcctt gaccgaacgt ccacagatt

 <210> 38
 <211> 33
 <212> DNA
 <213> Homo sapiens

 <400> 38 33
 ggaaaagctc ctaggctgct catatattac aca

 <210> 39
 <211> 38
 <212> DNA
 <213> Homo sapiens

 <400> 39 38
 ccgaggatcc actcacgttt gatttccacc tttgtgcc

 <210> 40
 <211> 51
 <212> DNA
 <213> Homo sapiens

<400> 40
 aaccagtggt atataggtgt ctttaatgtt gaaaccgcta gctttacagc t 51

<210> 41
 <211> 67
 <212> DNA
 <213> Homo sapiens

<400> 41
 aaagacacct atatacactg ggtagacag gccctggcc aaaggctgga gtggatggga 60
 aggattg 67

<210> 42
 <211> 26
 <212> DNA
 <213> Homo sapiens

<400> 42 26
 gaccggccc tggaacttcg ggtcat

<210> 43
 <211> 66
 <212> DNA
 <213> Homo sapiens

<400> 43
 gaccgaagt tccagggccg ggtcaccatc accgcagaca cctctgccag caccgcctac 60
 atggaa 66

<210> 44
 <211> 64
 <212> DNA
 <213> Homo sapiens

<400> 44
 ccatagcata gaccccgtag ttaccataat atccctctct ggcgcagtag tagactgcag 60
 tgtc 64

<210> 45
 <211> 63
 <212> DNA
 <213> Homo sapiens

<400> 45
 ggtaactacg ggtctatgc tatggactac tggggtaag gaacccttgt caccgtctcc 60
 tca 63

<210> 46
 <211> 37
 <212> DNA
 <213> Homo sapiens

<400> 46 37
 ccagggccgg gtcaccatca ccagagacac ctctgcc

<210> 47
 <211> 27
 <212> DNA
 <213> Homo sapiens

<400> 47
 caggccccctg gcccaagggct ggagtgg 27

<210> 48
 <211> 17
 <212> DNA
 <213> Homo sapiens

<400> 48
 tacgcaaacc gcctctc 17

<210> 49
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 49
 gagtgcacca tatgcggt 18

<210> 50
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 50
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr
 20 25 30
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Val
 35 40 45
 Gly Tyr Ile Asp Pro Phe Asn Gly Gly Thr Ser Tyr Asn Gln Lys Phe
 50 55 60
 Lys Gly Lys Val Thr Met Thr Val Asp Thr Ser Thr Asn Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gly Gly Asn Arg Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110
 Thr Val Ser Ser
 115

<210> 51
 <211> 483
 <212> DNA
 <213> Mouse

<220>
 <221> CDS
 <222> (53)...(432)

<400> 51
 atgagggcc ctgctcagat ttttgattc ttggtcagga gacgttgtag aa atg aga 58
 Met Arg
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ccg tct att cag ttc ctg ggg ctc ttg ttg ttc tgg ctt cat ggt gct 106
 Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His Gly Ala

5	10	15	
cag tgt gac atc cag atg aca cag tct cca tcc tca ctg tct gca tct			154
Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser			
20	25	30	
ctg gga ggc aaa gtc acc atc act tgc aag aca agc caa gac att aac			202
Leu Gly Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn			
35	40	45	50
aag tat atg gct tgg tac caa cac aag cct gga aaa cgt cct agg ctg			250
Lys Tyr Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro Arg Leu			
55	60	65	
ctc ata cat tac aca tct gca tta cag cca ggc atc cca tca agg ttc			298
Leu Ile His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe			
70	75	80	
agt gga agt ggg tct ggg aga gat tat tcc ttc aac atc agc aac ctg			346
Ser Gly Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser Asn Leu			
85	90	95	
gag cct gaa gat att gca act tat tat tgt cta cag tat gat aat ctg			394
Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu			
100	105	110	
tgg acg ttc ggt gga ggc acc aag ctg gaa atc aaa cg ggctgatgct			442
Trp Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys			
115	120	125	
gcaccaactg tatccatctt cccaccatcc acccgggatc c			483

<210> 52

<211> 126

<212> PRT

<213> Mouse

<400> 52

Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His			
1	5	10	15
Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser			
20	25	30	
Ala Ser Leu Gly Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp			
35	40	45	
Ile Asn Lys Tyr Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro			
50	55	60	
Arg Leu Leu Ile His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser			
65	70	75	80
Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser			
85	90	95	
Asn Leu Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp			
100	105	110	
Asn Leu Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys			
115	120	125	

<210> 53

<211> 470

<212> DNA

<213> Mouse

<220>

<221> CDS

<222> (1)...(432)

<400> 53

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atg aaa tgc agc tgg gtc atg ttc ttc ctg atg gca gtg gtt aca ggg      48
Met Lys Cys Ser Trp Val Met Phe Phe Leu Met Ala Val Val Thr Gly
  1              5              10              15

gtc aat tca gag gtt cag ctg cag cag tct ggg gca gag ctt gtg aag      96
Val Asn Ser Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys
              20              25              30

cca ggg gcc tca gtc aag ttg tcc tgc aca gct tct ggc ttc aac att     144
Pro Gly Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile
              35              40              45

aaa gac acc tat ata cac tgt gtg aag cag agg cct gaa cag ggc ctg     192
Lys Asp Thr Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu
              50              55              60

gag tgg att gga agg att gat cct gcg aat ggt tat act aaa tat gac     240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp
  65              70              75              80

ccg aag ttc cag ggc aag gcc act ata aca gct gac aca tcc tcc aac     288
Pro Lys Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
              85              90              95

aca gcc tac ctg cag ctc agc agc ctg aca tct gag gac act gcc gtc     336
Thr Ala Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val
              100              105              110

tat ttc tgt gct aga gag gga tat tat ggt aac tac ggg gtc tat gct     384
Tyr Phe Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala
              115              120              125

atg gac tac tgg ggt caa gga acc tca gtc acc gtc tcc tca gcc aaa     432
Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Lys
              130              135              140

acgacacccc catctgtcta tccactggcc cgggatcc                        470

```

<210> 54

<211> 144

<212> PRT

<213> Mouse

<400> 54

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Met Lys Cys Ser Trp Val Met Phe Phe Leu Met Ala Val Val Thr Gly
  1              5              10              15
Val Asn Ser Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys
              20              25              30
Pro Gly Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile
              35              40              45
Lys Asp Thr Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu
  50              55              60

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Glu Trp Ile Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp
 65 70 75 80
 Pro Lys Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
 85 90 95
 Thr Ala Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val
 100 105 110
 Tyr Phe Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala
 115 120 125
 Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Lys
 130 135 140

<210> 55
 <211> 106
 <212> PRT
 <213> Homo sapiens

<400> 55
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
 1 5 10 15
 Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn Lys Tyr
 20 25 30
 Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro Arg Leu Leu Ile
 35 40 45
 His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser Asn Leu Glu Pro
 65 70 75 80
 Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu Trp Thr
 85 90 95
 Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 56
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 56
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ile Lys Tyr
 20 25 30
 Leu Asn Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Glu Ala Ser Asn Leu Gln Ala Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Gln Ser Leu Pro Tyr
 85 90 95
 Thr Phe Gly Gln Gly Thr Lys Leu Gln Ile Thr
 100 105

<210> 57
 <211> 106
 <212> PRT

<213> Homo sapiens

<400> 57

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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1      5      10      15
Asp Arg Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn Lys Tyr
      20      25      30
Met Ala Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro Arg Leu Leu Ile
      35      40      45
His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
      50      55      60
Ser Gly Ser Gly Arg Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
65      70      75      80
Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu Trp Thr
      85      90      95
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
      100      105

```

<210> 58

<211> 6

<212> PRT

<213> Homo sapiens

<400> 58

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Arg Ile Arg Val Glu Lys
 1      5

```

<210> 59

<211> 123

<212> PRT

<213> Homo sapiens

<400> 59

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Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1      5      10      15
Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
      20      25      30
Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
      35      40      45
Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp Pro Lys Phe
      50      55      60
Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Asn Thr Ala Tyr
65      70      75      80
Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
      85      90      95
Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala Met Asp Tyr
      100      105      110
Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
      115      120

```

<210> 60

<211> 119

<212> PRT

<213> Homo sapiens

<400> 60

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
 20 25 30
 Ala Met His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Met
 35 40 45
 Gly Trp Ile Asn Ala Gly Asn Gly Asn Thr Lys Tyr Ser Gln Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gly Gly Tyr Tyr Gly Ser Gly Ser Asn Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ser
 115

<210> 61
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 61
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Thr
 20 25 30
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Met
 35 40 45
 Asx Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp Pro Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala Met Asp Tyr
 100 105 110
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 62
 <211> 6
 <212> PRT
 <213> Homo sapiens

<400> 62
 Phe Asn Ile Lys Gly Ala
 1 5

<210> 63
 <211> 6
 <212> PRT
 <213> Homo sapiens

<400> 63
 Phe Asn Ile Lys Ala Phe

1

5

<210> 64
 <211> 406
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (16)...(393)

<400> 64
 aagcttgccg ccacc atg aga ccg tct att cag ttc ctg ggg ctc ttg ttg 51
 Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu
 1 5 10

ttc tgg ctt cat ggt gct cag tgt gac atc cag atg aca cag tct cca 99
 Phe Trp Leu His Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro
 15 20 25

tcc tca ctg tct gca tct gta gga gat aga gtc acc atc act tgc aag 147
 Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys
 30 35 40

aca agc caa gac att aac aag tat atg gct tgg tac caa cag aca cct 195
 Thr Ser Gln Asp Ile Asn Lys Tyr Met Ala Trp Tyr Gln Gln Thr Pro
 45 50 55 60

gga aaa gct cct agg ctg ctc ata cat tac aca tct gca tta cag cca 243
 Gly Lys Ala Pro Arg Leu Leu Ile His Tyr Thr Ser Ala Leu Gln Pro
 65 70 75

ggc atc cca tca agg ttc agt gga agt ggg tct ggg aga gat tat act 291
 Gly Ile Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Tyr Thr
 80 85 90

ttc acc atc agc agc ctg cag cct gaa gat att gca act tat tat tgt 339
 Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys
 95 100 105

cta cag tat gat aat ctg tgg acg ttc ggt caa ggc acc aag gtg gaa 387
 Leu Gln Tyr Asp Asn Leu Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
 110 115 120

atc aaa cgtgagtgga tcc 406
 Ile Lys
 125

<210> 65
 <211> 126
 <212> PRT
 <213> Homo sapiens

<400> 65
 Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His
 1 5 10 15
 Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser

	20		25		30										
Ala	Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	Cys	Lys	Thr	Ser	Gln	Asp
	35						40						45		
Ile	Asn	Lys	Tyr	Met	Ala	Trp	Tyr	Gln	Gln	Thr	Pro	Gly	Lys	Ala	Pro
	50						55				60				
Arg	Leu	Leu	Ile	His	Tyr	Thr	Ser	Ala	Leu	Gln	Pro	Gly	Ile	Pro	Ser
65					70					75					80
Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Arg	Asp	Tyr	Thr	Phe	Thr	Ile	Ser
			85					90						95	
Ser	Leu	Gln	Pro	Glu	Asp	Ile	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	Tyr	Asp
			100					105					110		
Asn	Leu	Trp	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys		
	115						120					125			

<210> 66
 <211> 454
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (16)...(441)

<400> 66
 aagcttgccg ccacc atg gac tgg acc tgg cgc gtg ttt tgc ctg ctc gcc 51
 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala
 1 5 10

gtg gct cct ggg gcc cac agc cag gtg caa cta gtg cag tcc ggc gcc 99
 Val Ala Pro Gly Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala
 15 20 25

gaa gtg aag aaa ccc ggt gct tcc gtg aaa gtc agc tgt aaa gct agc 147
 Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser
 30 35 40

ggt ttc aac att aaa gac acc tat ata cac tgg gtt aga cag gcc cct 195
 Gly Phe Asn Ile Lys Asp Thr Tyr Ile His Trp Val Arg Gln Ala Pro
 45 50 55 60

ggc caa agg ctg gag tgg atg gga agg att gat cct gcg aat ggt tat 243
 Gly Gln Arg Leu Glu Trp Met Gly Arg Ile Asp Pro Ala Asn Gly Tyr
 65 70 75

act aaa tat gac ccg aag ttc cag ggc cgg gtc acc atc acc gca gac 291
 Thr Lys Tyr Asp Pro Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp
 80 85 90

acc tct gcc agc acc gcc tac atg gaa ctg tcc agc ctg cgc tcc gag 339
 Thr Ser Ala Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu
 95 100 105

gac act gca gtc tac tac tgc gcc aga gag gga tat tat ggt aac tac 387
 Asp Thr Ala Val Tyr Tyr Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr
 110 115 120

ggg gtc tat gct atg gac tac tgg ggt caa gga acc ctt gtc acc gtc 435
 Gly Val Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val

125

130

135

140

tcc tca ggtgagtgga tcc
Ser Ser

454

<210> 67
<211> 142
<212> PRT
<213> Homo sapiens

<400> 67
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
1 5 10 15
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
20 25 30
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile
35 40 45
Lys Asp Thr Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu
50 55 60
Glu Trp Met Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp
65 70 75 80
Pro Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Ala Ser
85 90 95
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
100 105 110
Tyr Tyr Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala
115 120 125
Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
130 135 140

<210> 68
<211> 109
<212> PRT
<213> Homo sapiens

<400> 68
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Asp Ile Ser Asn
20 25 30
Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gly Ser Pro Lys Leu Leu
35 40 45
Ile Tyr Tyr Ala Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser
50 55 60
Gly Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu
65 70 75 80
Gln Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro
85 90 95
Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 69
<211> 130
<212> PRT
<213> Homo sapiens

<220>
 <221> VARIANT
 <222> 32, 33
 <223> Xaa = Any Amino Acid

<400> 69
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ser Leu Val Xaa
 20 25 30
 Xaa Ser Ile Ser Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys
 35 40 45
 Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val
 50 55 60
 Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val
 65 70 75 80
 Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
 85 90 95
 Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
 100 105 110
 Tyr Asn Ser Leu Pro Glu Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
 115 120 125
 Ile Lys
 130

<210> 70
 <211> 125
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> 106, 120
 <223> Xaa = Any Amino Acid

<400> 70
 Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
 20 25 30
 Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly Arg Ile Asp Pro Ala Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe
 50 55 60
 Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
 65 70 75 80
 Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gly Tyr Tyr Tyr Asp Ser Xaa Val Gly Tyr Tyr Ala Met
 100 105 110
 Asp Tyr Trp Gly Gln Gly Thr Xaa Val Thr Val Ser Ser
 115 120 125

<210> 71
 <211> 129
 <212> PRT
 <213> Homo sapiens

<220>

<221> VARIANT

<222> 115

<223> Xaa = Any Amino Acid

<400> 71

Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	Pro	Gly	Ala
1				5					10					15	
Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	Thr	Ser	Tyr
			20					25					30		
Ala	Ile	Ser	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu	Glu	Trp	Met
		35					40					45			
Gly	Trp	Ile	Asn	Pro	Tyr	Gly	Asn	Gly	Asp	Thr	Asn	Tyr	Ala	Gln	Lys
	50					55					60				
Phe	Gln	Gly	Arg	Val	Thr	Ile	Thr	Ala	Asp	Thr	Ser	Thr	Ser	Thr	Ala
65					70					75					80
Tyr	Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Tyr
				85					90					95	
Cys	Ala	Arg	Ala	Pro	Gly	Tyr	Gly	Ser	Gly	Gly	Gly	Cys	Tyr	Arg	Gly
			100					105					110		
Asp	Tyr	Xaa	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser
		115					120					125			
Ser															